

connecting members connecting adjacent annular elements;

wherein the annular elements and connecting members are made of Nitinol, with each connecting member preset with an elasticity which causes the connecting member to elongate longitudinally when the annular elements are in their expanded state to compensate for the smaller longitudinal dimension of the annular elements in the expanded state.

23. The stent of claim 22, wherein each annular element comprises a plurality of alternating struts and apices connected to each other to form a substantially annular configuration.

24. The stent of claim 23, wherein the connecting members are connected to the apices of the adjacent annular members.

25. The stent of claim 23, wherein the plurality of struts comprises left and right struts, with each pair of left and right struts connected to each other at an apex.

26. The stent of claim 23, wherein each strut has a longitudinal dimensional which is smaller when the annular elements are in the expanded state than in the compressed state.

27. The stent of claim 23, wherein each strut has a longitudinal dimensional which is larger when the annular elements are in the compressed state than in the expanded state.

28. The stent of claim 23, wherein at least one of the annular elements is closed such that the plurality of alternating struts and apices are connected to each other to form a closed annular element.

29. The stent of claim 22, wherein at least one of connecting member has a plurality of alternating segments.

30. The stent of claim 29, wherein the at least one connecting member has a plurality of alternating and angled straight segments.

31. The stent of claim 22, wherein each connecting member has a larger longitudinal dimension when each annular element is in the expanded state than in the compressed state to compensate for the smaller longitudinal dimension of the annular element in the expanded state.

32. The stent of claim 22, wherein each connecting member has a smaller longitudinal dimension when each annular element is in the compressed state than in the expanded state to compensate for the larger longitudinal dimension of the annular element in the compressed state.

33. The stent of claim 22, wherein the stent has a plurality of segments along its length, each segment assuming a different diameter when the annular elements are in their expanded state.

34. The stent of claim 22, wherein the annular elements and connecting members define an alternating longitudinal pattern of annular elements and connecting members.

35. The stent of claim 22 comprising, at about normal body temperatures, a shape-memory, superelastic, austenitic alloy portion and a shape memory, martensitic alloy portion, the superelastic austenitic alloy portion having a transition temperature from martensite to austenite less than body temperature while the martensitic alloy portion has a transition temperature from martensite to austenite greater than body temperature, the martensitic alloy portion and superelastic austenitic alloy portion being constructed, arranged and associated with respect to each other in comprising the stent such that the two alloy portions act in combination to allow, upon transformation of the austenitic alloy portion to martensite at a temperature below the transition temperature, constraint of the stent to a deployment diameter smaller than the predetermined fabricated diameter and upon transformation of the austenite alloy portion from martensite back to austenite to self-expand the stent back to about the predetermined fabricated diameter at temperatures in excess of the transition temperature of the austenitic superelastic